

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 14 and 15 are objected to because of the following informalities: A proper dependent claim must depend on a preceding claim. However, Claims 14 and 15 improperly depend on claims 22 and 23 respectively. Appropriate correction is required.
2. Claim 27 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Both claims recite the same function the processor must perform.
3. Claims 27-29 are objected to because of the following informalities: The preamble of the claims seem to be in conflict with their parent claim 26. As written currently, the preambles of Claims 27-29 appear to coincide with independent claim 16 and not 26. The Examiner suggests either amending the dependency to recite claim 16 as the parent claim or amending the preamble to read "A system for generating stimuli...as claimed in claim 26", thus deleting the first part of the preamble that states "A processor." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 6, 7, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation "Mexican-hat shape" is indefinite. First, the Examiner notes that "Mexican-hat" is a colloquial term and has no standardized meaning. One of ordinary skill in the art would not readily be able to associate the exact graph or shape of a function when confronted with the term "Mexican-hat shape."

6. Furthermore, the hat shape Applicant appears to be referring to (in Fig. 4 of Applicant's specification) appears to be an inverted hat shape, with the peak of the graph being the minimum of the function.

7. Lastly, although Applicant's specification details a graph that does resemble an inverted hat shape, the term "Mexican-hat shape" is not an adequate or definite reflection of the exact shape of the function.

8. The Examiner notes that when describing the shape of a function, nothing can be more specific or representative of the shape than the mathematical function itself. If Applicant wants to accurately encompass the shape of the function in the claim language, the Examiner contends the function of Claims 7 and 19 are more than sufficient. These claims render claims 6 and 18 irrelevant and a cancellation of these claims would overcome the rejection.

9. Otherwise, to overcome the rejection, Applicant will need to attribute a clear and definite meaning to "Mexican-hat shape" within the specification without adding new matter. Currently, the specification does not adequately attribute any definite or specific

meaning to the term thus rendering the claim indefinite. Again, the Examiner notes that claiming the actual latency function of claims 7 and 19 would naturally encompass the graphical shape of the function and thus render claims 6 and 18 irrelevant.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-3, 10, 13, 14, 16, 22 and 24-27 are rejected under 35 U.S.C. 102(b) as being anticipated by McDermott et al. (5,597,380).

12. Regarding Claims 1, 2 and 10, McDermott teaches an auditory prosthesis, i.e. cochlear implant (Abstract) with a linear array of electrodes 1 (Fig. 1), wherein the device applies temporal adjustments to stimulation pulse based on signal amplitude. Specifically, the stimuli are arranged from largest amplitude to smallest amplitude and then applied in sequence every 4 ms to a unique electrode of the electrode array (col. 4, line 55—col. 5, line 2).

13. In regards to Claims 3 and 25, the claim limitation "implantable" merely requires the system to be capable of being implanted into the brain. Due to the small size of cochlear implants, these devices are also capable of being implanted into the brain. This limitation serves only as a size constraint and therefore is anticipated by McDermott.

14. With regards to Claims 13, 14, 16 and 22, McDermott teaches an auditory prosthesis including an array of electrodes 1, a stimulator unit 3 and a processor 7 that applies temporal adjustments to stimulation pulse based on signal amplitude (Fig. 1). Specifically, the stimuli are arranged by the processor from largest amplitude to smallest amplitude and then applied in sequence every 4 ms to a unique electrode of the electrode array (col. 4, line 55—col. 5, line 2).

15. Regarding Claim 24, McDermott teaches the implant is a cochlear implant (Abstract).

16. In regards to Claims 26 and 27, McDermott teaches that the processor applies the temporal adjustment of 4 ms after the stimuli are ordered by amplitude (col. 4, line 55 - col. 5, line 2).

### ***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claims 5 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over McDermott et al. (5,597,380) in view of Faltys et al. (2001/0031909). McDermott discloses all of the claimed invention except for applying a temporal adjustment to stimulation in response to a weighted sum of proximate stimuli. However, Faltys teaches obtaining weighted sums of proximate stimulation groups and subsequently applying a temporal delay based on the weighted sum for the purpose of assuring the most relevant stimuli are applied to the user (Sections [0084-0085]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in the McDermott reference to include applying temporal adjustments to stimulation based on weighted sums of proximate stimuli, as taught and suggested by Faltys, for the purpose of assuring the most relevant stimuli are applied to the user.

20. Additionally, the Examiner notes that it has been held that the functional “whereby” statement does not define any structure and accordingly can not serve to distinguish. *In re Mason*, 114 USPQ 127, 44 CCPA 937 (1957).

21. Claims 11, 12, 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDermott et al. (5,597,380) in view of Gibson (2004/0078057). McDermott discloses all of the claimed invention except for including a drug delivery system in the cochlear implant. However, Gibson teaches incorporating drug delivery into an implanted cochlear stimulator for the purpose of promoting healing and/or more efficient neural stimulation while preventing the formation of substantial scar tissue in the cochlea (Abstract; Section [0095]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in the McDermott reference to include a pharmaceutical drug delivery means, as taught and suggested by Gibson, for the purpose of promoting healing and/or more efficient neural stimulation while preventing the formation of substantial scar tissue in the cochlea.

***Allowable Subject Matter***

22. Claims 8, 9, 20, 21, 28 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

23. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY A. PORTER, JR whose telephone number is (571)270-5419. The examiner can normally be reached on Monday - Thursday, 7AM - 4PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Layno can be reached on (571)272-4949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. A. P./  
Examiner, Art Unit 3766

/Carl H. Layno/  
Supervisory Patent Examiner, Art  
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